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# University Computer Center newsletter

Director: Peter C. Patton

227 EXPERIMENTAL ENGINEERING  
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## PAPER COSTS INCREASING

--by J.K. Foster

Because of increased paper costs and decreased supplies as described in the April, 1974 newsletter, UCC has been forced to raise its charge for paper output from 2 cents to 3 cents per sheet. The charge for punch card output will be raised from 0.2 cents to 0.3 cents per card. The charge for cards used in the closed shop keypunching and reproducing service will be raised from 0.15 cents to 0.225 cents per card. These new rates will take effect July 1, 1974.

## MORE ON THE PAPER SHORTAGE

--by L.A. Liddiard

Paper products of all kinds, including computer paper and cards, are becoming increasingly scarce and expensive. Paper is scarce and every university newsletter that we get points up that this is a national and international problem. Moore Business Forms, our principal supplier, has cut all its customers to 80% of their 1973 supply of paper. As a consequence, UCC will not be able to guarantee that jobs will be printed on high-grade paper; you may find your output appearing on paper of varying weights and colors. Paper costs are rising. UCC has recently been forced to raise the price from 2 cents to 3 cents per page, and all indications are that this price will not necessarily be stable for the next fiscal year.

As a consequence, UCC is requesting that all users help in alleviating this problem. UCC feels that your cooperation is vital in ensuring that a supply of paper will be available for this year. In a concomitant effort, UCC, in its conversion to KRONOS 2.1, will be closely inspecting the system, each compiler, package, and program, to see that all wastage of paper is eliminated. Users may use the suggestion cards to point out individual programs or packages that they feel are paper wasters. UCC will allocate persons to correct UCC programs and will transmit these suggestions to CDC or other universities for packages which they maintain.

The following are some suggestions for cutting down paper usage.

1. Use as much of a printed page as possible, using fully the 132 character page width and avoiding the printout of blank lines and excessive areas of pages on which nothing is printed.
2. Try to make the output from your program as compact as possible, avoiding page ejects and single spacing your output whenever possible.
3. If there are errors in the source program, be sure you fully understand the errors before the job is re-submitted.
4. If you have a copy of the source listing and you have not made changes, use the appropriate control cards to suppress the listing and the cross reference maps. For example:
 

MNF(R=0)	to suppress the cross references only	FTN(L=0)
MNF(L=0)	to suppress the source listing & cross references	COMPASS(L=0)
RUN(G)		FUN(G)
5. Do not produce loader maps unless absolutely necessary. UCC will be making the loader default option MAP(OFF).
6. Consider using microfilm for long listings that will be little used. See the writeup MF501 for duplicating the printer output page onto microfilm.
7. Examine your jobs carefully. Do you need all your output, or are you practicing "over-kill," i.e., printing more than necessary "just in case?"
8. Put all used computer paper and cards in the recycling barrels and boxes at the Lauderdale site or at the terminal sites. If you have listings of 100 pages or longer, bring them to ExpEng or Lauderdale and we will recycle the back of them for printing on systems time. We don't currently plan on doing this to our paying customers since a heavily printed output (when recycled) shows through to the reverse side making reading difficult.

We cannot emphasize enough the necessity for conserving paper. If we continue to use paper unthinkingly, the "operative statement" is we WILL run out, not we MAY run out.

## ACCOUNTING SUMMARIES: ARE THEY USEFUL?

--by J.K. Foster

UCC is thinking of discontinuing the mailing of end-of-the-month accounting summaries or of sending them only to those problem sponsors who request them. This is mainly because of the paper shortage and the impression that many of these summaries are not looked at.

Reactions to this idea are solicited. Also, suggestions as to how the summary might be improved to give the information needed will be welcomed and considered. Please send responses to

James K. Foster  
University Computer Center  
227 Experimental Engineering  
University of Minnesota  
Minneapolis, MN 55455

It should be pointed out that daily accounting information is always available by calling 373-4548.

## JOIN THE ORDER OF THE GREEN TREE

--by A.B. Michel

Seizing upon the good idea of saving paper by reducing source listing output for SNOBOL put forth in the University of Indiana Random Bits article (April 1974, by C. Hardy), here are some easy ways to save paper in SNOBOL, LISP, and PASCAL at the University of Minnesota.

- SNOBOL & SNOBOLC: Use of the listing directives: -UNLIST and -LIST can selectively control the printing of source lines.
- SNOBOLC : Use of the control card parameter L: SNOBOLC(L=0) suppresses the source listing.
- LISP : If the control card parameters L and P are omitted, no source listing is produced. Within LISP, the pseudo function LISTING[s] where the S-expression s is NIL suppresses the source listing from that point on. If s is the atom P or any other non-NIL S-expression, listing of the source is restored.
- PASCAL : Use of the control card parameter L: PASCAL(L=NULL) suppresses the source listing. In the future we may implement a compiler directive L to control the listing of source lines.  
 ↗\$L↖ would then suppress the listing,  
 ↗\$L↗ would restore it.

## KRONOS CONVERSION PERIODS FOR JUNE

--by L.A. Liddiard

As previously announced, UCC will make the KRONOS 2.1, level 4 operating system available for trial conversion and experimentation for users and their programs during the month of June in anticipation of a complete changeover on September 1, 1974. The June dates will be the three consecutive Saturdays: June 8, June 15, and June 22, from 3:00 - 7:00 PM. The accounting information will not be used during these periods.

UCC has not completely converted all of the current systems and the following areas or packages will probably not be available in June.

JOB ENTRY - Export High Speed will not be available until July and therefore entry to the system will be at Lauderdale and through the medium speed terminals.

MAGNETIC TAPE - Certification of tapes, Electron Beam Recorder tapes (MF501), and the long tape driver will not be available for testing.

PERMANENT FILES - The program to do a dump of all of the files of a user will not be available.  
 - Users must dump MOMS pack files to tape prior to these hours in order to load any pack file needed during this testing time.

COMPILERS - COBOL (SORT/MERGE 3.0 interface) has not passed the UCC validation tests.  
 - The expected library calling sequence will be the FTN and MNF(C) calling sequence and thus no conversion will be made of the current RUN/FUN/MNF library of UCC supplied subroutines.

APPLICATIONS - BMD, SPSS, UMST, and other packages will be available in July.

ACCOUNTING - For this trial period the new KRONOS account numbers (they are different from the current MOMS numbers) must be used. Each current problem sponsor will receive his new KRONOS number in the mail before June 8.

To aid users in converting to KRONOS, the following conversion guides have been published by UCC: 1) Compiler Conversion Guide, 2) Control Card Conversion Guide, 3) Permanent File Conversion Guide, 4) Tape Conversion Guide, 5) COBOL Conversion Guide, and 6) Abridged Description of KRONOS Control Cards.

During these three test days, consultants will be available at Lauderdale to assist with user problems. Users are expected to test out programs and use this time to familiarize themselves with the KRONOS job and control cards. Any jobs not finished at the end of the four hour period will be returned "as is" to the user. Because of the short time period and the paper shortage, users are asked to limit the amount of printer output generated by their test decks.

## EARLY WARNING: JULY 4TH HOLIDAY HOURS

## LAUDERDALE

Close 4 AM Thursday July 4th  
Open 6 PM Thursday July 4th

## EXPERIMENTAL ENGINEERING

Close Midnight Wednesday July 3rd  
Open 8 AM Friday July 5th

## WEST BANK

Close Midnight Wednesday July 3rd  
Open 9 AM Friday July 5th

## SOME COMPARISON STATISTICS

--by L.A. Liddiard

Some comparison statistics are presented here for the first four months of this year and last year.

	J A N U A R Y		F E B R U A R Y		M A R C H		A P R I L	
	1973	1974	1973	1974	1973	1974	1973	1974
JOBS RUN	48,212	57,543	56,427	61,590	58,466	60,035	54,353	64,723
from ExpEng	39.9%	29.1%	41.3%	27.2%	35.3%	25.4%	33.9%	26.8%
from Lauderdale	21.9%	11.0%	21.0%	8.4%	24.8%	8.5%	18.3%	7.9%
from West Bank	20.2%	21.6%	19.8%	18.3%	14.3%	17.5%	17.9%	16.9%
from RJE's	12.4%	33.5%	13.0%	43.1%	21.2%	44.1%	26.4%	44.7%
for maintenance	5.7%	4.8%	4.9%	3.0%	4.4%	4.5%	4.2%	3.7%
AVERAGE TIMES (in minutes)								
on input queue	10.5	29.2	23.1	16.9	21.3	15.4	18.9	9.9
at control point	6.4	6.6	6.8	5.5	6.5	5.4	6.1	5.5
on output queue	5.1	5.7	6.1	6.3	5.7	7.3	4.9	5.2
printing	1.7	1.7	1.7	1.8	1.8	2.0	1.6	1.4
PP/CP TIME RATIO	2.22	3.49	2.86	2.40	2.45	2.07	2.97	2.02

UCC analysis of these figures allows the following observations.

1) UCC's medium speed remote job entry (RJE) software and hardware packages achieved the desired stability in March 1973 and, since that time, growth has been in the jobs submitted from these Univac 1004 and CDC UT200 terminals. Within the next four months, over 50% of the jobs entering the CYBER 74 will be through the medium speed terminals and 40% through the high speed terminals at Experimental Engineering and West Bank. Thus, over 90% of the jobs to the CYBER 74 will be from remote locations.

2) Switching the last CDC 6603 disk system off in February 1974 shows that having only the faster CDC 7054/844 disk systems has lowered costs to the user and increased throughput. The lowered cost is found in the ratio of PP time to CP time, going from 2.5 through 3.5 to 1 to approximately 2 to 1. The increased throughput is found in the lower average times that a job was at a control point (i.e., the time spent by the system in actually transforming an average input file to its resultant "output" files).

3) Simulation studies had shown a 60% improvement in job throughput (assuming that there were extra central processor and I/O capacities available) if 32K additional core were to be added to the 65K CDC 6600. The 98K CYBER 74 was installed on the last weekend of March and the average time on input for the month of April 1974 in comparison to the previous months and year shows that the simulation studies were approximately correct.

4) Although it does not show in these statistics, the CYBER 74 has proven very reliable. It achieved a 98% hardware uptime during the scheduled 2 week acceptance period of April 15 to April 29.

## AND SOME LAURELS

At this time UCC would like to thank all of the persons who have enabled us to continue to expand our computing services.

Dr. Marvin Stein, the first director, and those persons on the Computer Advisory Committee in 1966 who selected a machine that would allow continued growth for over seven years.

Dr. Richard Halverson, past director, who initiated and expanded the remote job entry system.

Dr. Frank Verbrugge, the members of the Advisory Committee to University Computer Services, and Dr. Peter C. Patton, the current director, who approved the latest upgrade of memory and disk systems.

The Control Data Corporation Customer Engineers for efficient installation of a new mainframe and excellent maintenance of the old one.

All of our users who have patiently weathered the continuous evolution of the system.

## TO ALL REMOTE TERMINAL USERS

--by R.T. Franta

If you wish to print out the entire present contents of the NOTICE file the following job setup will do the trick:

```
Jobcard with T1 and CM20000
FETCH,NOTICE.
CBF,NOTICE,OUTPUT.
```

if only the notice numbers are desired, the following job setup can be useful:

```
Jobcard with T1 and CM20000
FETCH,NOTICE.
CATLOG,NOTICE,N=1.
```

If you wish to receive a copy of the current SYSNOTE, all that is required is that you place a BIN card in your deck when it is run. The form of the BIN card is:

```
BIN,id,xxxx.
```

where id is your local site ID and xxxx is any integer constant. Check with the local supervisor for details or restrictions on the use of the BIN card.

## NEW VERSION OF CAL SNOBOL AVAILABLE

--by A.B. Mickel

A new version of CAL SNOBOL (SNOBOLC) is now available via the control cards  
NEW,SNOBOLC.  
SNOBOLC(parameters)

This version will become the "current" version when it is shown to be acceptable to users.

Changes and improvements in this version of CAL SNOBOL include:

- 1) Minimum field length required is now 20000.
- 2) Compile time error messages are more informative.
- 3) List storage compaction, one phase of garbage collection, now functions correctly, allowing execution of complex and/or large programs. Heap block compaction, the other phase of garbage collection, is still turned off due to errors remaining in the code.
- 4) Rewinding INPUT-associated files works properly.
- 5) SNOBOLC no longer hangs when attempting to read a non-existent file or a file that is at EOR, EOF, or EOI. The functions EORLEVEL and EOI are now usable.
- 6) A new second argument to function FREEZE is accepted which specifies the IDENT name of the overlay.
- 7) All buffer sizes (B parameter) are now 401B by default rather than 201B.

SNOBOL4 is a very powerful string processing and symbol manipulation language used primarily for non-numeric applications. Having its origins in the early sixties, SNOBOL has evolved through four versions, becoming more generalized and possessing many other datatypes besides those related to handling strings of characters.

CAL SNOBOL is an interpreter which is more or less a subset of standard SNOBOL4 as defined in the book The SNOBOL4 Programming Language, by Griswold, Poage, and Polonsky (Prentice-Hall, 2nd ed., 1971). This book is an excellent reference and tutorial describing the macro (standard) implementation of SNOBOL4 for the IBM 360 computer. (The macro-implementation of SNOBOL4 available at UCC can be accessed via the control card: SNOBOL.) CAL SNOBOL is not a macro-implementation, but instead a version tailored for efficiency on the CDC 6000/CYBER series machines.

A very good book for beginning SNOBOLers is A SNOBOL4 Primer, by Griswold & Griswold (Prentice-Hall, 1973). The current UCC documentation for SNOBOL4 is the UCC SNOBOL USERS' MANUAL, now being re-written.

A SNOBOL short course will be given by UCC during first summer session. See the short course announcements in this newsletter.

## THE SNOBOL CORNER

*(The next SNOBOL CORNER will appear in October)*

--by A.B. Mickel

OUTPUT associated variables in CAL SNOBOL are not formatted as they are in standard SNOBOL. This can have consequences with regard to carriage control for strings whose length is greater than the carriage width, if associated with the file OUTPUT (hard copy printing device).

A solution is to "buffer" the OUTPUT as in the following example:  
Before "buffering",

```
OUTPUT = LONGSTRING
```

may have lost a few characters when wraparound occurred.

After "buffering", the two statements

```
LOOP LONGSTRING LEN(CARRIAGE.WIDTH) . OUTPUT = :S(LOOP)
OUTPUT = LONGSTRING
```

solve the problem. (CARRIAGE.WIDTH may previously be set to a value like 132.) A similar method may be used to "buffer" input strings, but perhaps for different reasons.

## SUMMER CONSULTING HOURS

--by T.D. Hodge

Our normal summer consulting schedule will begin on June 17, as follows:

140 ExpEng: general consulting : 10:00 AM - Noon Monday through Friday  
1:00 PM - 3:00 PM

statistical consulting: (schedule will be posted)

Lauderdale: general consulting : 1:30 PM - 3:30 PM Monday through Friday  
7:30 PM - 9:30 PM Monday through Thursday

However, until the promised air conditioning has been installed in 140 ExpEng, consultants will be released from duty whenever the temperature in Room 140 tops 90°F (32.2°C). At that temperature, Room 140 is not conducive to thinking and we will encourage users also to find cooler quarters. The room will remain open and the inter-active terminals will still be available. [The air conditioning project was approved and the funds appropriated in January, 1974.]

## SUMMER SESSION SHORT COURSES

## KEYPUNCH WORKSHOPS

Beginning May 8th, a weekly introductory keypunch class has been offered in Room 225 ExpEng. This class will be held every Wednesday from 10:15 - 11:00 AM. Sign-up sheets are posted on the wall at the top of the main flight of stairs between 1st & 2nd floors of ExpEng. Only one class should be necessary.

## STATISTICAL PACKAGES

Sessions on SPSS and BMD will be offered. A schedule will be posted.

## SNOBOL

See page 4 of this newsletter for a description of SNOBOL4 and for references. Knowledge of at least one higher level language such as FORTRAN or COBOL is assumed.

DAYS : July 8,10,12 (M,W,F)  
 HOURS : 3:25 - 5:00 PM  
 ROOM : 404 BlegH  
 INSTRUCTOR: A. Mickel  
 REFERENCES: See page 4

## SYSTEM 2000

This course teaches the student how to use System 2000, a generalized data base management system. Techniques for defining data bases, retrieving and updating, and using the data base through FORTRAN and COBOL are discussed.

DAYS : July 15,17,19 (M,W,F)  
 HOURS : 1:25 - 5:00 PM  
 ROOM : 404 BlegH  
 INSTRUCTOR: to be arranged  
 REFERENCES: System 2000 Reference Manual  
System 2000 Users' Guide

## PLAN AHEAD: 2ND SUMMER SESSION

UCC PLANS TO OFFER A COURSE ON FORTRAN FOR PRESENT RUN/FUN/MNF USERS, INTRODUCING THE NEW COMPILERS AND OFFERING ASSISTANCE. THE COURSE WILL BE SCHEDULED WHEN MORE INFORMATION IS AVAILABLE TO US.

## TIMESHARING WORKSHOPS

An opportunity to work under personal supervision at a terminal and to ask questions about file usage. Locations and times will be posted.

## KRONOS 2.1 CONVERSION SESSIONS

Describes the general differences between MOMS & KRONOS, pointing out the reasons for the conversion and explaining the schedule. Four areas will be covered: 1) control cards, 2) tape usage, 3) permanent file usage, and 4) compiler changes. This course assumes that attendees have experience with the MOMS/SCOPE operating system.

DAYS : July 1,3,5 (M,W,F)  
 HOURS : 1:25 - 3:20 PM  
 ROOM : 404 BlegH  
 INSTRUCTOR: R. Franta and others  
 REFERENCES: Materials from instructor.

## RPG

This course deals with beginning programming in the RPG (Report Program Generator) language. RPG, an easily learned language with useful programming capabilities, allows creation of business reports along with other sophisticated applications.

DAYS : July 8,10,12 (M,W,F)  
 HOURS : 1:25 - 3:20 PM  
 ROOM : 404 BlegH  
 INSTRUCTOR: M. Kramer  
 REFERENCES: Materials from instructor.

## INTRODUCTION TO CYBER 74 USAGE

Introductory course for beginners, stressing common control cards and utilities of MOMS/SCOPE (the current operating system) and KRONOS 2.1 (the future operating system).

DAYS : June 24,26,28 (M,W,F)  
 HOURS : 1:25 - 3:20 PM  
 ROOM : 404 BlegH  
 INSTRUCTOR: R. Franta  
 REFERENCES: Materials from instructor.

CYBER 74 OPERATING HOURS

	12:01AM	2AM	3AM	4AM	8AM	4PM	Midnight
Sunday							
Monday	.....						
Tuesday	.....						
Wednesday	.....						
Thursday	.....						
Friday	.....						
Saturday	.....						

.... (Lauderdale only)  
 ||||| (Lauderdale, ExpEng)  
 //// (Lauderdale, ExpEng, West Bank)

CONSULTING SCHEDULE

EAST BANK	GENERAL COMPUTING	STATISTICAL COMPUTING
140 ExpEng	Mon- 9AM-5PM Thurs: 7PM-9PM Fri : 9AM-5PM Sat : 10:00AM-12:00N Sun : 10:00AM-12:00N	Mon : 1:00PM- 3:00PM Tues : 8:30AM- 1:30PM Wed : 10:00AM-12:00N Thurs: 10:00AM- 3:00PM Fri : 10:00AM- 2:00PM Sat : 10:00AM-10:00AM
ST. PAUL	GP	STATISTICAL COMPUTING
125E ClaOf & 125C ClaOff	Fri : 10:00AM-12:00N Sat : 10:00AM-12:00N	Mon-Fri: 9AM-12N 1PM- 4PM Mon : 9:00AM-12:30PM Wed : 2:30PM- 5:30PM Thurs: 9:30AM-12:30PM
WEST BANK	GENERAL COMPUTING	STATISTICAL COMPUTING
25 BlegH*	Mon-Fri: 9AM-12N 1PM- 4PM	Mon-Fri: 9AM-12N 1PM- 4PM
167 SocSci		Mon : 9:00AM-12:30PM Wed : 2:30PM- 5:30PM Thurs: 9:30AM-12:30PM
LAUDERDALE	GENERAL COMPUTING	STATISTICAL COMPUTING
	Mon- Thurs: 1:30PM-3:30PM 7:30PM-9:30PM Fri : 1:30PM-3:30PM	Mon: 1:30PM-3:30PM

SEE PAGE 4 OF THIS NEWSLETTER

\*Social science computing only.

MEDIUM SPEED REMOTE TERMINALS

(Hours will vary from site to site.)

site	Supervisor
38 ElectE (East)	J. Guentzel/373-5404 M. Cook/373-3895
N640 EltH (East)	J. DeWitt/376-7377 N. DeWitt/376-7377
S191 KoltH (East)	T. Faulkner/376-7024 J. Abdallah/373-2348
321 MinMet (East)	C. Swanson/373-5475 R. Oelfke/373-5680
69 Physics (East)	Bob Scarlett/373-0243 Dave Olson/376-7175
167 SocSci (West)	G. Lutgen/373-3608
257 BioSci (StP)	R. Comstock/373-0979 H. Meyer/376-3067
125G ClaOff (StP)	C. Bingham/373-0988
415 CofH (StP)	D. Nelson/376-7003 T. Ehlen/376-7003
24 NorH (StP)	J. Colten/373-0990 D. Rignell/373-0990
Users Room (Laud)	Shift Supervisor/373-4940

TELEPHONE NUMBERS

373-4548	Account Clerk, CYBER 74
373-7753	Account Clerk, 6400 (MERITSS)
373-4596	ExpEng I/O
376-7067	Field Engineering
373-2521	Keypunch Supervisor
373-4940	Lauderdale Shift Supervisor
373-4995	Microfilm Operator (leave a message)
373-4876	Operations (R. Folden)
373-4994	Recorded Message
373-7744	Reference Librarian
376-3963	Remote Job Entry Coordinator
373-4995	Tape Librarian (leave a message)
373-4360	UCC Office
373-4599	User Services (T. Hodge)
373-4921	Users' Room (Lauderdale)
373-3608	West Bank I/O

KEYPUNCH LOCATIONS

(number of keypunches is in parentheses)

East Bank	St. Paul	West Bank
38 ElectE (1)	257 BioSci (1)	90 BlegH (1)
N640 EltH (1)	125G ClaOff (1)	167 SocSci (1)
130 ExpEng (2)	415 CofH (1)	
131 ExpEng (1)	24 NorH (1)	
208 ExpEng (8)*		<u>Lauderdale</u>
223 ExpEng (7)		Users' Room (5)*
S191 KoltH (1)		

\*includes 1 interpreting card punch.

REFERENCE MANUALS

[Copies are available for reference in 140 ExpEng, Lauderdale Users' Room, West Bank Computer Center, and at the medium speed terminal sites.]

APEX I	86615300C
ALGOL version 2	60306100D
COBOL version 3	60253000E
COMPASS version 2	60279900D
CYBER 74, volume 1	60347400
CYBER 74, volume 2	60347300
CYBER 74, volume 3	60347100
FORTRAN EXTENDED version 3	60329100D
FTN DEBUG users' guide	60329400C
FORTRAN (RUN/FUN) version 2.3	60174900F
MIMIC simulation language	44610400E
MODIFY	60281700D
PERT/TIME	60133600C
SCOPE version 3.2	60189400L
SIMSCRIPT version 2	60178300C
SIMULA	60234800E
SORT/MERGE version 3	60252600E
6000/7000 computer systems	60100000W
BMD & BMDX: Biomedical Computer Programs	
IMSL library catalog (library 3, edition 3)	
MNF reference manual	
OMNITAB II programmers reference manual	
OMNITAB II, an introduction to	
SPSS: Statistical Package for the Social Sciences	
SPSS version 5.5 (CYBER 74 implementation)	
System 2000 reference manual	
System 2000 users' guide	
UMST: University of Minnesota statistical programs	
UCC Users' reference manual	

## LIBRARY CHANGES &amp; ADDITIONS

--by M.J. Frisch

Library changes as of May 2, 1974:

MXTRP,MXMPY,MXMPY1,            Changed on FT3LIB to agree with the versions on SYSLIB. This only affects FTN  
 MXMOV,MXCMBN,SIMPSON        and MNF(C) users.

Library changes as of May 15, 1974:

Library	Routine	Description of change
SYSLIB,FT3LIB	ALOGAM,GAMMA	Log of gamma function, gamma function (new routine).
SYSLIB,FT3LIB	BANSOL	Solution of linear equations; band matrix (new routine).
SYSLIB,FT3LIB	CHEBY	Uses PROCER (error processing routine).
SYSLIB,FT3LIB	CHECK	FTN version.
SYSLIB,FT3LIB	CMXLNEF	Old CMXLNEQ, uses full pivoting (slower than new CMXLNEQ).
SYSLIB,FT3LIB	CMXLNEQ	Uses partial pivoting.
SYSLIB,FT3LIB	DMXLNEF	Old DMXLNEQ, uses full pivoting (slower than new DMXLNEQ).
SYSLIB,FT3LIB	DMXLNEQ	Uses partial pivoting.
SYSLIB,FT3LIB	DOTPROD	Uses PROCER, improved accuracy.
SYSLIB,FT3LIB	DXINT	Uses PROCER, correction to last digits of some internal constants.
SYSLIB,FT3LIB	EI	Uses PROCER.
SYSLIB,FT3LIB	FREQDSN	Uses PROCER, mode 2 of CDC 1604 version restored.
SYSLIB,FT3LIB	FRESNEL	Uses PROCER, FTN version.
SYSLIB,FT3LIB	MERGE2	Uses PROCER.
SYSLIB,FT3LIB	MERGE4	Uses PROCER.
SYSLIB,FT3LIB	MXLNEF	Old MXLNEQ, uses full pivoting (slower than new MXLNEQ).
SYSLIB,FT3LIB	MXLNEQ	Uses partial pivoting.
SYSLIB,FT3LIB	QSORT,QSORT1	Uses PROCER, FTN version, new entry point QSORT1.
SYSLIB,FT3LIB	REMARK,REMARK\$	FUN, FTN version.
SYSLIB,FT3LIB	RKGILL	Uses PROCER, FTN version.
SYSLIB,FT3LIB	SICI	Uses PROCER, FTN version.
SYSLIB,FT3LIB	SNCNDN	Uses PROCER, FTN version.
SYSLIB,FT3LIB	SORT1	Uses PROCER.
SYSLIB,FT3LIB	SORT2	Uses PROCER.
SYSLIB,FT3LIB	TINV,TINV1, TINV2	Uses PROCER, new entry points TINV1 (1-tailed test, real parameter), TINV2 (2-tailed test, real parameter).
SYSLIB,FT3LIB	TTEST,TTEST1, TTEST2	Uses PROCER, new entry points TTEST1 (1-tailed test, real parameter), TTEST2 (2-tailed test, real parameter).
SYSLIB only	UNIT	RUN version modified for new I/O routines.
FT3LIB only	READEC	Version for MNF users.
FT3LIB only	WRITEC	Version for MNF users.
	OMNITAB 5.03	Corrections made, errata sheet 4.

## PROGRAM TROUBLE REPORTS

--by B. Stahl

To obtain a current list of PTR reports, use the following control cards

Jobcard with T1 and CM20000  
 FETCH,PTRLIST.  
 CS(PTRLIST,OUTPUT)

Questions, and new Program Trouble Reports may be sent to the PTR Coordinator, 227 ExpEng, University of Minnesota, Minneapolis, MN 55455. When submitting new reports, please include a test deck, a clear description of the problem, and a listing with the PTR form. Replies will be made if requested on the form. Copies of the PTR report form can be obtained from the PTR Coordinator or a UCC consultant.

## DOCUMENTATION PRODUCED AT UCC

## Corrections:

The following correction should be made to the SPSS Version 5.5 update manual:  
 On page 307, line 24     ... SPSS has a default line limit of 1000000(...  
 should be                ... SPSS has a default line limit of 100000(...

The following correction should be made to the manual Introduction to OMNITAB II:  
 On page 73, line 28     XXX,T20,CM1450000.XXXXXXXXXX  
 should be                XXX,T20,CM145000.XXXXXXXXXX

## Revisions:

Pocket Guide to UCC Facilities, revised May, 1974, available in Reference Room, 235a ExpEng.  
UCC Users' Manual, Part 1, revised May, 1974, available in Reference Room, 235a ExpEng.

## New:

SPSS NONLINEAR Version 1.0, available in Reference Room, 235a ExpEng.

## THE SUGGESTION BOX

(Unsigned suggestion cards are ignored. Questions may be reworded for clarity.)

Q/S *Why isn't there a phone in the Users' Room such as they have at Lauderdale? Many errors can be easily handled over the phone rather than walking all the way back to see the boss!*

A A pay phone was installed in the hall directly outside the door of 140 ExpEng (the Users' Room) before Christmas. We agree, it was inconvenient before then. The alternative to the pay phone would have been a free phone which would have been limited to campus calls.

(T. Hodge)

Q/S *I think it would be nice if there were CRT terminals available here (at Lauderdale to access the CYBER 74).*

A We have no present plans to place a 6400 terminal in the Users' Room at Lauderdale. At the present time the transmit feature is only available to specially validated users on certain terminals. We are not able to make this service generally available. Therefore, a CRT at Lauderdale would be able to serve only a few people. We hope you find the 1004 terminal in the Users' Room a convenience for accessing the CYBER 74.

(T. Hodge)

Q/S *It's too hot. Turn down the heat (in Experimental Engineering).*

A The heat has been turned off. We realize and appreciate your discomfort; the temperatures in this building have been hard to control. You may open hallway windows for comfort but please leave the windows in 208 ExpEng closed since this room is air-conditioned.

(A. Franck)

Q/S *I believe that people would make more efficient use of the interpreting keypunch if they knew how to punch drum cards. Perhaps a set of instructions could be posted.*

A Instructions will be posted. Also, this is covered in the keypunch classes offered weekly by Keypunch Operations. See the notice on keypunch workshops in this newsletter.

(R. Fleagle)

Q/S *I don't understand why the "priority system" will do 30-40 jobs after mine (hour to hour and one half) while I'm waiting and others aren't.*

A The priority system is designed to give a quick turnaround to those jobs requesting few resources (Central Processor time limit, amount of Central Memory requested on the job card, and length of time the printer is needed by one job, are viewed as resources). Thus, the more CM and time a user requests, the lower will be the initial priority assigned to his job. The system periodically increments the priority of those jobs which are waiting for service, thus bringing each job closer to its turn to run. After the job has performed its computations on the CP, its output must be printed. The greater the number of pages to be printed, the longer it will take for the OUTPUT file to come to the head of the output queue. (A printer cannot be pre-empted: as soon as a job with a large amount of output "gets" the printer, all other jobs, even those with only 2 pages of output, must wait.)

Therefore, if the system is busy (a lot of jobs being submitted), the people who run large jobs should expect a slower turnaround time relative to those who run small jobs. In other words, the more people who submit smaller jobs immediately before and after yours, the longer your job will wait. Also, please refer to the UCC newsletters of June, 1973 (page 4), October, 1973 (page 6), and January, 1974 (page 4).

(D. Hammes)

Q/S *If there really is a paper shortage, why does the computer (and assorted programs) waste so much space with operating info? It seems to me much of the info can be condensed into smaller spaces.*

A Yes, there is indeed a paper shortage and we suggest reading the article in the April 1974 FORTUNE. Since the Systems Group is currently heavily involved in converting to KRONOS 2.1, we do not have the manpower to re-write all of the operating system routines. If you have a particularly blatant example, please let us know and we will try to divert some programmer to correct that program. See the article in this issue on our current changes to save paper.

(L. Liddiard)

Q/S *I heard a rumor that CDC was developing a calculus based language system called PROSE. Is this an operative statement? P.S. Thanks for acknowledging my 7 month old suggestion for INDEX.*

A PROSE is available on CYBERNET, CDC's service bureau, and is not available outside. This status will change sometime soon. PROSE is a SCOPE 3.3 product. A user manual will be available at UCC soon; however, CYBERNET products are usually expensive.

(R. Hotchkiss)

Q/S *Isn't it possible to provide users with greater advanced warning of system changes? That is, the changeover on SPSS was announced on Friday May 3 and implemented on Sunday May 5. If one did not happen to run on 3 May, there was no way of getting the system notes before attempting a couple of runs...involving tape mountings, etc., i.e., expense.*

A Advance notices about SPSS were in the March and May newsletters. You can, of course, do a trivial run before your production jobs to get a copy of SYSNOTES. ExpEng I/O has a current SYSNOTE posted. Other terminal supervisors are encouraged to do the same.

(R. Hotchkiss)



Q/S The present I/O routines do not handle BUFFER IN correctly. When reading an X tape with "BUFFER IN(1,1) (Y(1),Y(20))" the routines read in 20 words, rather than reading in just one physical record. In many applications the physical record size is not known, or may vary from record to record. It makes no sense (and contradicts the MNF manual) to read in 1 1/2 physical records. Secondly, the routines buffer ahead into a circular buffer. This contradicts the spirit of buffer in and probably makes it impossible for a user to skip out to the middle of his tape and begin re-writing the end records.

A This is a bug and it will be fixed.

(L. Liddiard)

Q/S Are you going to add the "E" parameter to KRONOS LIBEDIT?

A The E parameter will be in LIBEDIT. Also an Ø parameter to put overlay level numbers in the OLDPL directory for random overlay loading which will allow the routine GROVEL to be eliminated. These changes will be sent to CDC as a request for software modification in order that, hopefully, CDC will adopt them.

(L. Liddiard)

Q/S For MNF relocatable: does it put out an informative comment with date (as seen by CATALOG) as FTN does?

A Yes, MNF's PREFIX loader table will have an informative comment with the date of the MNF compilation and, at a later time, will agree with FTN practice.

(L. Liddiard)

Q/S How about a FORTRAN callable routine to read and write in KCL registers. P.S. I see in KRONOS 2.1, words 70-77 are control card image. What is going to happen to I/O flags in words 76 & 77 when the changeover occurs?

A The compiler manager E.J. Mundstock has agreed to write such a FORTRAN callable routine and it will be announced when the routine is ready. KRONOS 2.1 is identical to SCOPE 3.2 in that the control card image is kept in absolute user words 70-77. It is true that when a FORTRAN program begins running, a routine sets up words 76 and 77 as I/O flags in either system, thus destroying the last 20 characters of the last control card (this is the control card that caused the FORTRAN program to begin execution).

(L. Liddiard)

NEWS FROM SYSTEM NOTES

--from SVSNOTE # 62:

A new MIX assembler-simulator package, version 1.1, was placed on the system on Monday, May 13, 1974. New features include faster assembly times, better assembly diagnostics, free-field format, faster simulation, additional termination information, and better diagnostics for abnormal termination. This new package can be accessed with the control cards

NEW,MIXAL.  
MIXAL.

Any program that will not work on the new version but did (or will) work on the old version should be reported to Stuart Lenz, 211 ExpEng.

The old MIXAL package will still be available to users, and can be accessed with the control card MIXAL. Users are encouraged to try the new version, however, since the old version will disappear as soon as UCC is convinced that the new one is better.

SPECIAL REQUEST SLIPS

The special request slip (illustrated below) is required for any job that has the following special conditions:

- 1) Jobs requiring transient tapes (list the names of the tapes on the request slip).
- 2) Jobs using multiple reel tapes (include full instructions on mounting tapes).
- 3) Jobs punching more than 2000 cards.
- 4) Jobs requesting more than 400 pages of printed output.
- 5) Jobs with any special instructions to the operator.

In these cases, the instructions must be as specific as possible since the operator will not attempt to interpret vague instructions and may drop jobs where he does not understand a request.

U.C.C.	SPECIAL REQUEST SLIP	U.C.C.
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DECK NAME-----	BIN NO.-----	DATE-----
PUNCH CARDS, APPROX. NO. IF OVER 2000 -----		
PRINTED PAGES, APPROX. NO. IF OVER 400-----		
LIST THE NAMES OF ALL TRANSIENT TAPES, INSTRUCTIONS FOR MULTIPLE REEL TAPES, AND ANY OTHER SPECIAL INSTRUCTIONS. (MAKE SURE YOU ARE CLEAR AND COMPLETE. USE BACK IF NECESSARY)		
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01/15/73 RJM		

## BRIEF NOTES

*Let's correct some errors...*In the May issue of this newsletter, page 2, THE CYBER 74 AND THE FUTURE, item 5, we state that the "...double density disk drives with 2000 million characters..." This should, of course, be 200 million characters.

...In the same May issue, page 5, item d) of the answer to the first question on MNF, we state that "...there currently would be 4000 microseconds of inaccuracy...". This should be 400 microseconds of inaccuracy.

...Off by a factor of 10; somewhere there's a stuttering typewriter!

*New keypunches...*three new keypunches have been installed in Room 223 ExpEng; one new keypunch is at Lauderdale.

*Recycle your long listings!!!* The UCC Systems Group will happily accept used listings (over 100 pages) for re-use. They will use the back side for printing on systems time. Any and all contributions gratefully accepted. Please return listings to either ExpEng I/O or to Lauderdale I/O.

*Storage space at Lauderdale...*Construction of new offices in the users' area at Lauderdale will begin soon. These offices will take only a small portion of the user work area but will significantly reduce (or eliminate) the user storage area. Therefore, no requests for user storage space will be renewed and no new applications for space will be accepted until UCC knows how much space will be available. Users are advised that, if at all possible, they should claim their materials now before construction begins. No materials will be disposed of at this time (or ever) without adequate notice to the person or persons listed on the storage request form.

RETURN TO:

UNIVERSITY COMPUTER CENTER  
227 EXPERIMENTAL ENGINEERING  
UNIVERSITY OF MINNESOTA  
MINNEAPOLIS, MN 55455

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IF YOU WISH TO HAVE YOUR NAME  
REMOVED FROM THIS MAILING LIST,

WRITE TO:

EDITOR

UCC NEWSLETTER

AT THE ABOVE ADDRESS, OR CALL  
373-7744.

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UNIVERSITY ARCHIVES  
ROOM 11 WALLER  
MINNEAPOLIS CAMPUS